

E-training tool descriptor

Supra-category: IOTC ROS Scientific Field Observer Training (IOTC ROS SFO)

Category: IOTC fisheries: Tuna Purse-Seine Fishery (IOTC ROS TR12)

Assessment

This module aims to familiarize Observers with tuna purse-seine vessels, fishing gear and fishing operations as these will be used daily in their routine work.

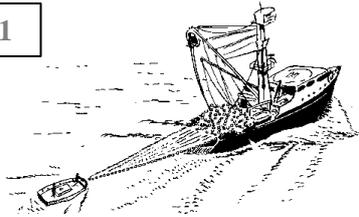
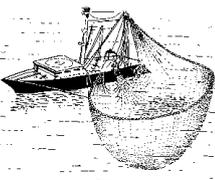
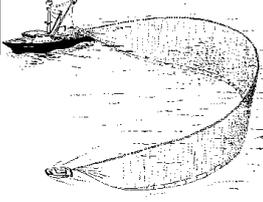
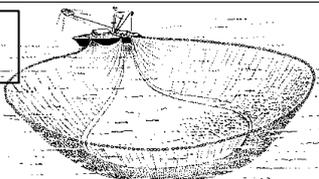
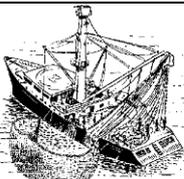
1. Methods of searching for fish by a tuna seiner include:
Select the correct answers from the list provided below.

Answer by ticking the correct answers

A	Air temperature	
B	The use of high-performance binoculars	x
C	The use of bird radars	x
D	The use of FADs (natural or artificial fishing aggregating devices) equipped or not with instrumented buoys.	x
E	The use of helicopters or drones	
F	The use of acoustic sonars and depth sounders	X
G	The use of information on water temperature, depth of the thermocline, presence of chlorophyll and macrophytes, and currents.	

At least two correct

2. Write down the names of the different phases of a fishing set of a Tuna Purse-seiner and organize them in chronological order.

1 	4 	2 
Shooting	Hauling	Circling
3 	5 	
Pursing	Brailing	

3. What characterizes an associated school of tuna?

Select the correct answers from below.

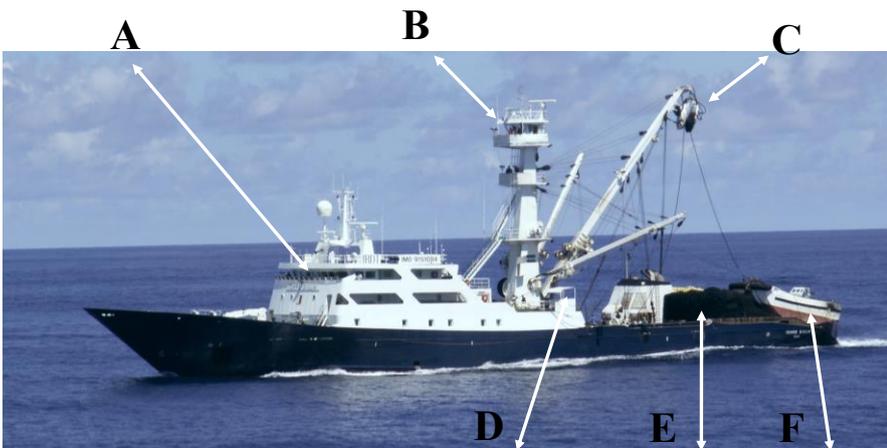
Answer by ticking the correct answers

- It presents high bycatch levels (>5%)

- It presents low bycatch levels (<5%)
- It mainly consists of mixed small size tuna including skipjack, juvenile bigeye and yellowfin tuna
- It mainly consists of mixed small size tuna including skipjack, kawakawa and bullet tuna
- It aggregates around natural or man-made FADs (e.g., whale sharks, logs, drifting FADs)
- It aggregates exclusively around man-made FADs (drifting or anchored FADs)
- It does not congregate around floating object
- It's associated with a higher successful haul, or 'set', rate
- It tends to give random results, but when successful they are highly profitable since they tend to catch large yellowfin and bigeye and very little bycatch.

At least two correct

4. Identify the different component of the Tuna purse-seiner drawn below.



A	Bridge
B	Crows nest
C	Power block
D	Operation control console
E	Purse-seine net
F	Skiff

5. Why the industrial tuna purse-seine fisheries use FADs equipped with instrumented buoys?

Select the correct answers from below. *Answer by ticking the correct answers. (ALL CORRECT)*

- Because it allows fishing opportunities to be focused into a small number of predictable locations
- Because it minimises search time and vessel operating costs
- Because it allows to confirm tuna school presence and size (only for buoys equipped with echo-sounders)
- Because it allows to consider information from many active buoys and therefore to select the most productive areas to visit.

At least two correct

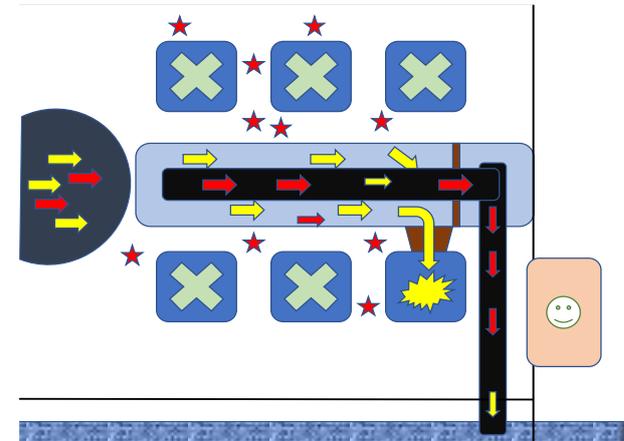
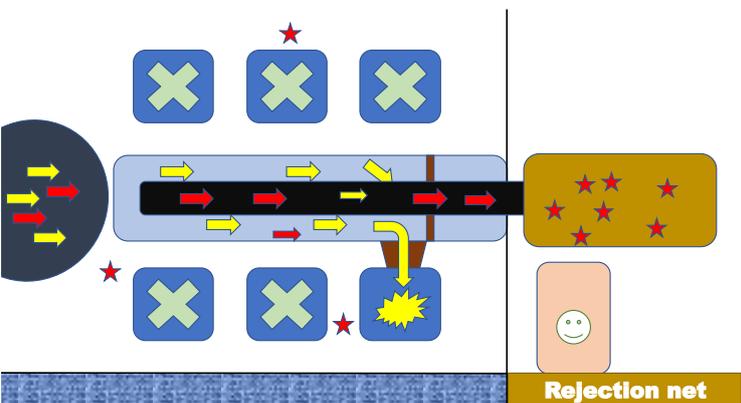
6. Make correspond observer work and observation areas on a purse-seiner (listed in the right column), to activities to be observed and information to be gathered in those areas (listed in the left column).

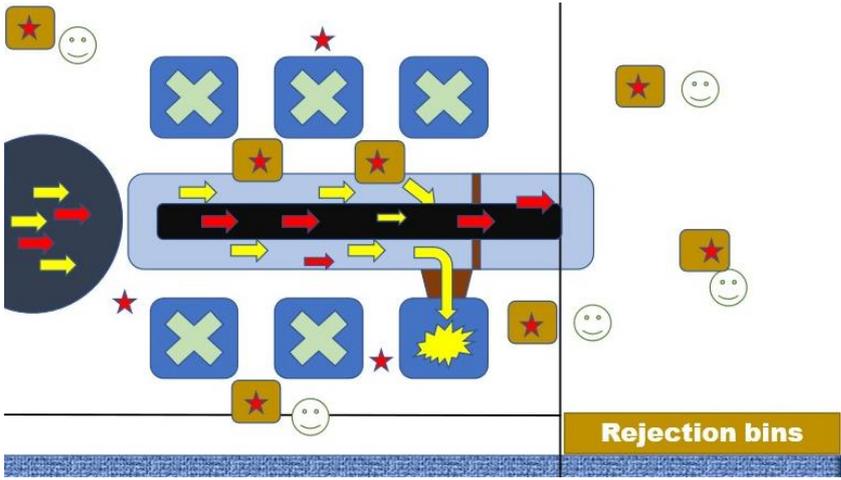
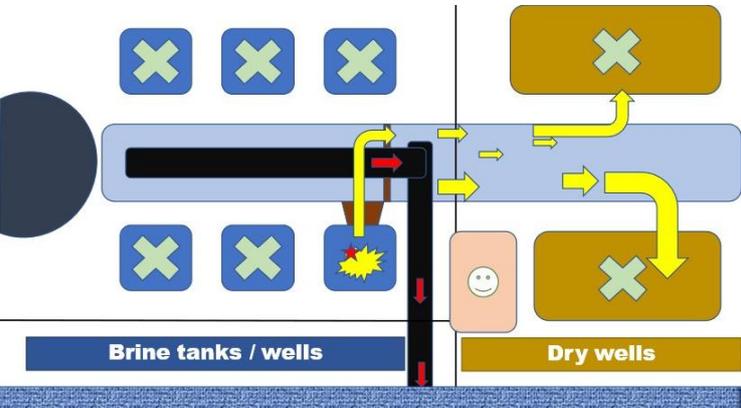
The bridge in the upper deck	Record position (latitude and longitude) every two hours and when fishing. Collect information on tuna school size, current speed and
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	direction, retained catch volume and composition. Communicate with Observer Programme using vessel communication means.
The operation control console	Observe the hauling and pursing of the net, the brailing of the catch and/or the capsizing of the net. Collect information on set total catch volume and on large fish released alive.
The main deck behind the purse-seine winches	Count, identify and sample large fish set aside by the crew.
The lower deck	Collect samples of retained and/or discarded fish. Count, identify and sample retained and/or discarded fish (target and non-target). Collect information on retained catch volume per species and on the volume of discards.

7. Purse-seine vessels can be equipped or not with a discard hatch on the factory deck. Last generation tuna purse-seiners can also be equipped with dry wells besides and shift catch from the traditional brine wells into dry wells outside fishing event time.

Make correspond purse-seine factory configuration and/or work methodology (listed in the right column), with observer work and sampling areas illustrated in the figures below (and listed in the left column).

<p>Vessel equipped with a discharge opening on the lower deck</p>	<p>Figure 1</p> 
<p>Vessel with no discharge opening on the lower deck that uses rejection nets.</p>	<p>Figure 2</p> 

<p>Vessel with no discharge opening on the lower deck that uses rejection bins.</p>	<p>Figure 3</p> 
<p>Vessel equipped with a discharge opening on the lower deck and dry wells during shifting.</p>	<p>Figure 4</p> 

8. What is the IOTC definition of Fish Aggregating Devices (FADs)?

Answer by ticking the correct answer from the ones provided below.

- FADs are anchored, drifting, floating, swimming or submerged object or group of objects, of any size, that has or has not been deployed, that is living or non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, logs, whales and whale sharks that fish may associate with. (CORRECT)
- FADs are anchored or drifting man-made objects, that have been deployed with the objective of getting fish associated with.
- FADs are anchored, drifting, floating, swimming or submerged object or group of objects, of any size, that has or has not been deployed, that is non-living, including but not limited to buoys, floats, netting, webbing, plastics, bamboo, and logs, that fish may associate with.

9. What characterizes a man-made DFAD?

Answer by ticking the correct answers from the ones provided below.

- Anchored to the substratum
- Not anchored to the substratum, left to drift freely in ocean currents.
- Mainly used by the industrial tuna purse-seine fishery, mostly in coastal regions.
- Deployed in offshore oceanic waters and used almost exclusively by the industrial tuna purse seine fleets.
- Can float at the surface or lie below the surface to avoid detection and hazards such as weather.
- Low-cost construction, made from floating rafts of bamboo.
- High-cost construction, installation and maintenance, made of a plastic buoy, currents and a solid anchor.

- Fitted with instrumented buoys containing satellite tracking devices and echosounders' for fish finding.
- Owned by the vessel that deploys them, although in practice a fisher will fish on any DFAD that is encountered.
- Owned by the government, or community owned. Only certain fisher will have the position and will fish on these FADs.

10. A DFAD structure consists of a floating structure, a submerged structure and a satellite buoy. The most sophisticated DFADs include sonar so that the fish population under the FAD can be estimated. According to the IOTC a DFAD can only be consider as ecological if:

Answer by ticking the correct answers from the ones provided below.

- DFAD raft is not covered, or only covered with non-meshed material and the tail it's made from non-meshed materials such as ropes or canvas sheets.
- DFAD raft is made of bamboo and covered with biodegradable large mesh net and the tail is made from biodegradable materials such as ropes, canvas sheets or large mesh net.
- DFAD raft is not covered, or only covered with small mesh net, and the tail it's made from biodegradable materials such as ropes, canvas sheets or large mesh net rolled into sausages.